

# ENTOMOLOGICAL NEWS

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VOL. LXXIII

APRIL, 1962

No. 4

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## A New *Hesperia* from Arizona (Lepid.: Hesperiidae)

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The author and his wife spent three weeks collecting in Arizona during September, 1960, including several days in the well-known White Mountains of the eastern part of the state. Among other butterflies collected was a small, rather dark *Hesperia* which was especially abundant at Horseshoe Cienega, about five miles southeast of McNary. This skipper is apparently undescribed; the only comparable specimens seen were from the Barnes collection at the U. S. National Museum in a group of unidentified *Hesperia*—from the White Mountains, Arizona. This species most nearly resembles *H. manitoba* Scudder, both superficially and genitally, though it is not far from *H. colorado* Scudder.

### *Hesperia susanae* n. sp.

*Male*.—*Head*, *thorax*, and *abdomen* dark brownish-black on the dorsal surface, the hairs of the abdomen and patagia only slightly greenish; the ventral surface is light grayish-tan. The *eyes* are black; the *palpi* are light gray; the *antennae* are tan with the clubs dark brown; the legs are tan, slightly greenish along the femora.

*WINGS*. *Upper surface* (Fig. 1): *Susanae* has the appearance of a small, light, bright *manitoba*, but the fuscous borders are not so extensive and appear slightly washed with fulvous, the fulvous ground color intermediate between that of *manitoba*

and *colorado*. The fulvous markings of the hind wings are in diffuse patches with brighter points corresponding to the spot-band of the under surface, rather than only in spots as in *manitoba*. The veins are strongly darkened, especially basad, contrasting more with the ground color than in either of the other species.

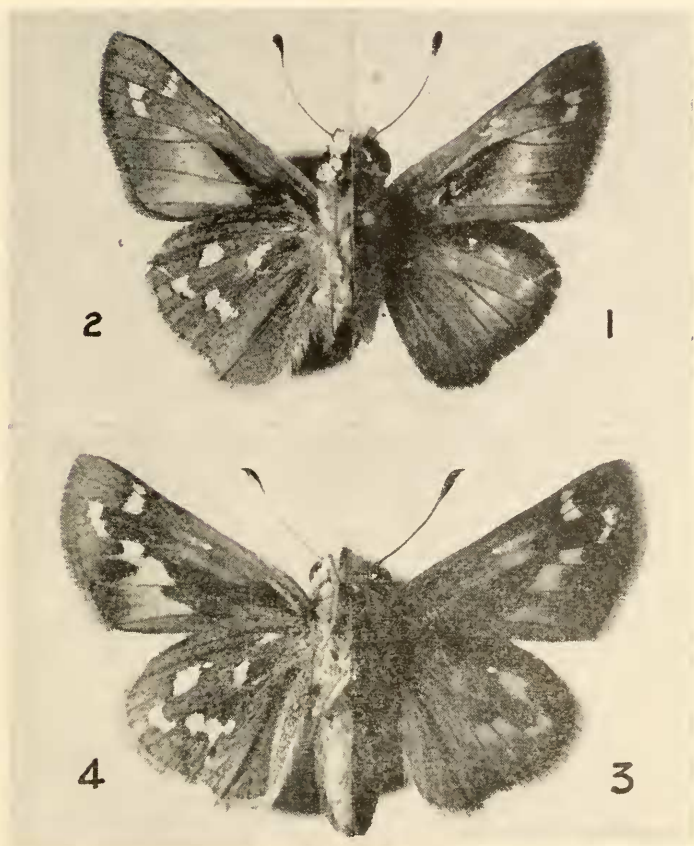
*Under surface* (Fig. 2): *Susanae* resembles a pale specimen of *manitoba* with the olive-brown ground color of the hind wings of that species replaced by olive-green. The spots of the hind wings are smaller than in either *manitoba* or *colorado* and are occasionally discontinuous and well-separated, whereas the spots of the other two species are generally contiguous and band-like. The anterior two spots and those posteriad of vein  $Cu_2$  always are reduced, and occasionally one or more may be absent; in the other two species these spots are present, though sometimes reduced. The spots are not edged in black, as is usual in *manitoba*. The length of the fore wing from base to end of costa varies in the series from 11.5 to 13 mm, averaging 12.16 mm; that of the holotype is 12 mm.

The ♂ *genitalia* (Fig. 5) most closely resemble those of *manitoba*, differing in the following respects: (1) the proximal tooth of the valva more nearly the same size as the distal one and not so incurved, often straight; (2) the dorsal margin of the sacculus more definitely "humped" medially; (3) the saccus much longer and with a more bulbous end; (4) the coecum penis strongly bulbous; and (5) the ventral surface of the penis relatively straight, not kinked in the vicinity of the ductus ejaculatorius.

*Female*.—*Head, thorax, abdomen, and appendages* as in male.

*WINGS*. *Upper surface* (Fig. 3): Closely resembles a pale *manitoba*, but the fuscous is less extensive and washed with fulvous. In paratypes Nos. 40 and 59, and to a lesser degree in Nos. 37, 42, and 63, the discal fuscous markings are almost extinct, leaving fuscous only marginad, and the fulvous areas are more tawny, resulting in very pale specimens.

*Under surface* (FIG. 4): Also resembles a pale *manitoba*. The spots of the hind wing are either not or only slightly out-



FIGS. 1-4. *Hesperia susanae* n. sp.

Holotype ♂: 1. Upper surface. 2. Under surface.

Allotype ♀: 3. Upper surface. 4. Under surface.

lined with dark scales, unlike *manitoba* in which they are strongly outlined; the spots posteriad of vein  $Cu_2$  and the anterior pair are reduced, occasionally absent. All the spots of *susanae* are smaller than those of *manitoba*, but unlike the male always arranged in a band. The length of the fore wing from base to end of costa varies in the series from 12 to 14.5 mm, averaging 13.62 mm; that of the allotype is 14 mm.

TYPE MATERIAL.—36 ♂♂ and 29 ♀♀, from the White Mountains, ARIZONA, all but six taken by the author and his wife. HOLOTYPE ♂: Horseshoe Cienega, White Mts., Apache Co., Ariz.; 8000 ft, in dry meadow; 3-ix-1960; Susan M. Miller; ♂ genitalic slide No. 8. ALLOTYPE ♀: Same data as holotype; Lee D. Miller.

PARATYPES 35 ♂♂: Nos. 1-11: same locality as holotype; 2-ix-1960; Lee D. or Susan M. Miller. Nos. 12-29: same data as holotype; Lee D. or Susan M. Miller. Nos. 30 and 31: Ditch Camp, White Mts., Apache Co., Ariz.; 8000 ft, along stream bed; 3-ix-1960; Lee D. Miller. No. 32: vic. Greer, Ariz., Apache Co.; 9000 ft, dry meadow; 3-ix-1960; Lee D. Miller. Nos. 33-35: White Mts., Ariz., no date; Barnes collection. In the following ♂ paratypes the genitalia have been examined: Nos. 1, 2, 11, 12, 13, 14, 20, and 33; the corresponding slides are Nos. 7, 12, 19, 10, 11, 5, and 20 of Lee D. Miller and 5 of McDunnough in the U. S. National Museum collection. 28 ♀♀: Nos. 36-44: same data as Nos. 1-11. Nos. 45-59: same data as holotype. No. 60: same data as Nos. 30 and 31. Nos. 61-63: same data as Nos. 33-35. Paratypes Nos. 29 and 45 were taken *in copula* by the author.

The holotype, allotype, and paratypes Nos. 6, 7, 10, 15, 18, 36, 37, 38, 40, and 46 will be deposited in Carnegie Museum. Paratypes Nos. 4 and 39 will be deposited in the U. S. National Museum, and the Barnes collection specimens, paratypes Nos. 33, 34, 35, 61, 62, and 63, will be returned to that institution. Paratypes Nos. 21 and 53 will be deposited in the American Museum of Natural History. Paratypes Nos. 19 and 43 will be deposited in the Canadian National Collection. Paratypes Nos. 5 and 41 will be deposited in the Los Angeles County Museum. Paratypes Nos. 3 and 44 will be deposited in the collection of Dr. C. Don MacNeill. Paratypes Nos. 24 and 54 will be deposited in the collection of Dr. J. W. Tilden. Paratypes Nos. 9 and 58 will be deposited in the collection of Mr. F. Martin Brown. Paratypes Nos. 17 and 50 will be deposited in the collection of Mr. H. A. Freeman. Paratypes Nos. 22 and 51 may be deposited in the collection of Mr. Kilian Roever.

*Hesperia susanae* is named for the author's wife, always an amiable and competent companion, who collected the greater part of the type series.

This species, while showing a close resemblance to *manitoba*, differs superficially by its smaller size, generally more fulvous coloration, and the weaker spot-band of the hind wings beneath, with the spots much reduced, occasionally strongly non-contiguous. The ♂ genitalia differ especially along the valvae, the saccus, and the penis. This species is apparently referred to in the literature as *manitoba* from Arizona. The author feels that all the high-altitude records of *manitoba* from that state may refer to *susanae*, not just those from the White Mountains.

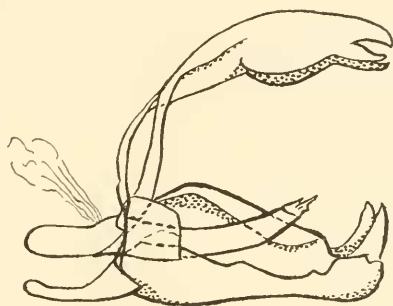


FIG. 5. *Hesperia susanae* n. sp. ♂ genitalia, left lateral aspect with left valva removed.

The author is deeply indebted to Dr. Richard M. Fox and Mr. Harry K. Clench for reading the manuscript and making suggestions on its preparation. Further thanks are due Dr. Fox for taking the photographs of the types. The author also wishes to thank the entire entomological staffs of the U. S. National and Carnegie Museums for placing their collections of *Hesperia* at his disposal for comparison.

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## A Parasitic Earwig from a Swahili Giant Rat (Dermaptera)

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The Swahili giant rat is a big fellow, as big as a small cat, measuring a good foot long in body with 14 inches of tail. I am told that at night when one comes across them they can be petted without danger. I still hesitate to thrust my hand in a live trap to get them out. They look like an overgrown vicious Norwegian rat. These rats are *Cricetomys gambianus osgoodi* Heller and are common here in the Usambara Mountains of northeast Tanganyika where I am studying the fleas of the area. A dozen specimens have produced no fleas but they always carry a parasitic earwig. I have collected many of the parasitic beetles of *Aplodontia* and had a large supply of Castor parasitic beetles come in from Norway, but these are small. This earwig is up to three quarters of an inch long and today I took 65 of them off a single rat. I note that this earwig belongs to the suborder Hemimerina, Family Hemimeridae, which has but the single genus *Hemimerus*. I am told this particular earwig is *H. vosseleri*, a strict parasite of *Cricetomys*. Any investigator wishing specimens is welcome to them. My address is Amani, Tanga, Tanganyika, c/o Malaria Institute.